6450-01-P

DEPARTMENT OF ENERGY

Notice of Request for Information (RFI) on Fostering Energy Innovation Ecosystems

AGENCY: Office of the Under Secretary for Science and Energy, Department of Energy (DOE).

ACTION: Request for Information (RFI).

SUMMARY: The U.S. Department of Energy (DOE) invites public comment on this Request for Information (RFI) regarding regional innovation ecosystems and regional cooperation. The purpose of this RFI is to support a public discussion about how to create and foster regional and local "innovation ecosystems," specifically for energy technologies and energy use. DOE is establishing through this RFI a temporary public "ideation" tool to serve as a resource of ideas for individuals and organizations interested in promoting regional innovation ecosystems.

DATES: Written comments and information are requested on or before February 28, 2017.

ADDRESSES: Interested parties should submit their comments using the IdeaBuzz.com platform at: https://ideabuzz.com/a/buzz/challenge/19113/ideas/top. Rules and guidelines for the Web-based tool can be found there, along with background information, the suggested topics included in this RFI, and opportunities to post ideas and to review, comment on, and "vote for"

ideas submitted by other people.

The public can view the submitted ideas and comments without creating a user-name on the IdeaBuzz platform, but IdeaBuzz does require users to register a user-name in order to participate (submit ideas, comment, and "vote"). DOE employees may not submit comments via this platform. DOE will not respond to individual submissions and may or may not publish a compendium of responses.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION:

I. Background

DOE is interested in understanding and fostering self-sustaining local and regional energy

"innovation ecosystems"[1] that bring together all the factors needed to translate research and ideas into successful new products and services, whether through start-up companies or new products and business lines in existing companies.

The value of a regional focus to promote innovation, economic development, and job-creation is widely recognized. For example, a decade ago, the Council on Competitiveness reported that "although national and state policies create a platform for innovation, the locus of innovative activities is at the regional level, where workers, companies, universities, research institutions and government interface most directly... Regions are the building blocks of national innovation capacity because they offer proximity and can provide specialized assets that foster firm-level differentiation."[2] A 2011 report from Jobs for the Future identified a need for "structures at the regional level to bring together key leaders from across public, private, and nonprofit sectors to formulate growth strategies that make the best use of regions' competitive assets."[3] And in 2012,

[1] Much has been written about innovation ecosystems, innovation clusters, industry clusters, and related concepts. The following links are only an illustrative sample: http://erc-assoc.org/sites/default/files/topics/policy_studies/DJackson_Innovation%20Ecosystem_03-15-11.pdf (National Science Foundation, 3/15/2011); http://documents.worldbank.org/curated/en/623971467998460024/pdf/100899-REVISED-WP-PUBLIC-Box393259B-Tech-Innovation-Ecosystems.pdf (World Bank, 1/11/2015); http://www.innovationmanagement.se/2011/05/16/what-are-innovation-ecosystems-and-how-to-build-and-use-them/ (InnovationManagement.se blog, 5/16/2011); http://masstech.org/innovation-ecosystem (Massachusetts Technology Collaborative, undated).

[2] *Regional Innovation: National Prosperity, Summary Report of the Regional Competitiveness Initiative & Proceedings of the 2005 National Summit on Regional Innovation*, Council on Competitiveness, February 2006, http://www.compete.org/storage/images/uploads/File/PDF Files/Regional Innovation National Prosperity.pdf .

[3] P. Carlson, R. Holm, and R. Uhalde, *Building Regional Partnerships for Economic Growth and Opportunity*, Jobs for the Future, 2011, www.jff.org/sites/default/files/publications/Building_Regional_paper_020211.pdf .

the National Research Council's Committee on Comparative National Innovation Policies made several observations[4] that speak directly to the value of regional innovation ecosystems and regional partnerships:

- Historically, federally funded R&D has not been connected to state and regional industrial development; bridging that gap can create the local talent and technology base needed to convert these U.S. investments into domestic companies, industries, and jobs.

- Private businesses and local education institutions and economic development agencies are in the best position to identify opportunities, gauge competitive strengths, and mobilize wide community support for regional cluster initiatives.

- Regional innovation cluster initiatives should be built upon existing knowledge clusters and comparative strengths of each geographic region.

Also, recent reviews of the capabilities of DOE's National Laboratories have strongly encouraged the laboratories to broaden their participation in regional innovation ecosystems.[5, 6] This was supported by what DOE officials heard about varying regional energy concerns and

[4] C. W. Wessner and A. W. Wolff, eds., *Rising to the Challenge: U.S. Innovation Policy for the Global Economy,* National Academies Press, 2012, https://www.nap.edu/read/13386/chapter/1.

[5] S. Andes, M. Muro, and M. Stepp, *Going Local: Connecting the National Labs to their Regions to Maximize Innovation and Growth,* Advanced Industries Series, Brookings/ITIF/CCEI, September 2014, www.brookings.edu/wp-content/uploads/2016/06/BMPP_DOE_Brief.pdf.

[6] T. J. Glauthier and J. L. Cohon, co-chairs, *Securing America's Future: Realizing the Potential of the Department of Energy's National Laboratories. Final Report of the Commission to Review the Effectiveness of the National Energy Laboratories,* Vol. 1, October 2015, http://energy.gov/sites/prod/files/2015/10/f27/Final Report Volume 1.pdf .

capabilities – and interest in national laboratory capabilities – as they participated in a series of university-hosted events during the spring and summer of 2016.[7]

II. Purpose

Based on the background above and on the broad range of ideas heard from university, State, and industry participants at the recent university-hosted events, DOE believes that there is much more yet to be said by the broader public, which could benefit all interested parties, including State and local governments, universities, policy groups, companies, and national organizations.

As a result, DOE is making this temporary ideation and knowledge-sharing tool available as a national "town hall" to support a public dialogue on regional energy innovation and innovation ecosystems. The ideation tool suggests a number of potentially fruitful topic areas for suggestions and ideas, although any ideas relating to innovation ecosystems and to local and regional collaboration to support innovation are welcome.

III. Request for Information Suggested Topics

This RFI and its associated web-based ideation tool does not require responses to all of the suggested topics, and would encourage all interested entities/individuals to offer ideas and comments in any of the topic areas, or in new topic areas where relevant. In general, the web-based ideation will work best when ideas regarding different topics are submitted individually, rather than bundling multiple ideas into a single submission.

[7] Information and a report on the events can be found at http://www.energy.gov/mission-innovation/university-forums.

Suggested Topics

The following topics and questions may guide – but should not restrict – ideas, suggestions, and comments submitted using the IdeaBuzz ideation website:

1. **Key Elements of an Innovation Ecosystem:** What are the essential "puzzle pieces" or "moving parts" that make up a successful, self-sustaining innovation ecosystem or technology "cluster"? They include businesses, educational institutions, research centers, people, policies, and financial resources – but are there specific *sub-types* of those categories that are especially important or frequently overlooked? Are there other categories of regional assets that are important as well?

2. **Ecosystem Sustainability:** Which of those key elements are most important for supporting the start-up of new businesses? Which are most important to make sure that the innovation ecosystem itself is self-sustaining and enduring? Are there supply-chain considerations that are often overlooked?

3. **Economic Benefits:** Which of those key elements are most important for supporting workforce development as part of the ecosystem? Which are crucial to accelerating the innovation cycle?

4. **Performance Metrics:** What identifiable metrics would provide useful measures of the economic or innovation impact of efforts to promote a regional energy innovation ecosystem?

5. **Regional Gaps:** Are there specific "ecosystem" components that are missing from a geographic region you're interested in? (Indicate region.) How could that region fill the gaps?

6. **Geographic Scales and Defining a "Region":** Most existing examples of innovation ecosystems and industry or technology clusters are fairly local or metropolitan in scale – meetings and site visits aren't more than an hour or two drive away. But energy concerns, challenges, and resources are often shared across a much larger geographic region. How should regional strategies or coalitions try to bridge those geographic scales? The university-hosted events that DOE attended defined their "regions" in different ways -- how should a regional energy cluster or innovation ecosystem define its scope or boundaries?

7. **Cooperating Regionally:** If local or regional organizations want to collaborate to help foster or enhance a regional energy innovation ecosystem, how should they organize or collaborate? Does the answer differ depending on geographic scale?

8. **Regional Opportunities:** What are the energy challenges, resources, or technologies that offer the most innovation opportunity to your region? (Identify region.) What would be the greatest strengths or weaknesses of your region in trying to create or enhance an energy innovation ecosystem?

9. **References and Models:** Recommend references, studies, data sources, or models

(including foreign innovation centers).

IV. Confidential Information

Because all idea and comments submissions are publicly visible, respondents are strongly advised to not include any information in their responses that might be considered business sensitive, proprietary, or otherwise confidential. Because the IdeaBuzz platform is not a government website, DOE is not able to provide any confidentiality protections for ideas submitted on the IdeaBuzz platform.

Issued in Washington, DC on January 18, 2017

Franklin M. Orr, Jr., Under Secretary for Science and Energy

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